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ANTIOXIDANT ACTIVITY EVALUATION AND DETERMINATION OF TOTAL PHENOLS IN *HUMULUS LUPULUS*

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Purpose of study: Oxidative stress is a preponderant pathophysiological condition to initiate degenerative processes (DNA mutations in macromolecules and damage cell membrane) involving premature aging, metabolic syndrome and cancer[1]. Currently, is great search active antioxidants; the *Humulus lupulus*, is used in combating symptoms of climacteric because of the presence of phytoestrogens in their composition[2]. Complementary therapies are being studied and evaluated, and between them highlights are the herbal preparations, called herbal medicines. The aim of this work was to evaluate the antioxidant potential of the dry extract of *H. lupulus*, through *in vitro* tests and determination of total phenols.

Methods: Antioxidant activity was determined for DPPH (1, 1-Diphenyl-2-picryl-hydrazyl) free radical scavenging activity[3] and by inhibition the oxidative hemolysis induced aqueous peroxyl radical AAPH (2, 2'-azobis (2-amidinopropane) hydrochloride) of human erythrocytes[4,5]. Total phenolic contents of *H. lupulus* dry extract samples were determined by the *Folin–Ciocalteu* method[6] and results expressed in µg of gallic acid equivalent (AGE).Tests were performed in triplicate at concentrations of 0.25, 0.50, 1, 3, 5 and 10 mg / ml.

Results: Antioxidant evaluation to the concentration of 10mg / mL dry extract of *H. lupulus* showed higher activity (83.56%) among the evaluated concentrations, for DPPH test. The hemolysis inhibition assay, the concentration of 1mg / ml showed (15.47% hemolysis) in the sixth hour reading. The determination of total phenols for the concentration 10mg / mL of dry extract was 216.69 µg of AGE.

Conclusion: *H. lupulus* valued dry extract showed potential for their use in antioxidant formulations. The evaluated activity can be correlated to the polyphenols found and quantified in the extract.

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